

### Abstract of the Disclosure

The invention relates to the use of an antigen which is a non-toxic double mutant form of pertussis toxin for the manufacture of a vaccine composition for intranasal administration to induce an immune response against B. pertussis infection. The invention also relates to the use of a non-toxic double mutant form of pertussis toxin for the manufacture of an adjuvant composition for stimulating or enhancing a protective immune response of an antigen co-administered therewith. The non-toxic double mutant is preferably one in which the glutamic acid 129 amino acid in the S<sub>1</sub> sub-unit has been substituted by glycine and the arginine 9 amino acid has been substituted by lysine.

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